

**ABSTRACT**

Detection of *Plasmodium* spp. by analysis of extrachromosomal DNA. It has been found that the molecular composition, physical arrangements, and nucleotide sequences of the extrachromosomal plastid-like element and mitochondrial element are highly conserved in different *Plasmodium* spp. The high degree of homology has been used to design genera-specific or species specific diagnostic assays with a low frequency of false negatives.

Plastid and Mitochondrial DNA sequences are disclosed. The use of the sequences is claimed for detection, prophylactic, and therapeutic treatment of *plasmodium* spp infection in human and other animals.